

CLAIMS

What is claimed is:

- 5 1. A method for preventing edge peeling defect, comprising:
 forming a thin film on a wafer;
 forming a patterned mental structure on said wafer;
 planarizing the surface of said wafer to remove redundant
patterned mental structure, wherein a explored part of said thin film is
10 explored after planarizing; and
 removing said explored part of said thin film.
2. The method according to claim 1, wherein said thin film
 comprises a barrier layer for preventing mental diffusion.
- 15 3. The method according to claim 1, wherein the material of said
 barrier layer is chosen from the group comprising the following: Ta, TaN,
 TiN and TiW.
- 20 4. The method according to claim 1, wherein said thin film is
 formed by physical vapor deposition.
5. The method according to claim 1, wherein said patterned
 mental structure comprises an interconnect layer.
- 25 6. The method according to claim 5, wherein said patterned
 mental structure is chosen from the group comprising the following:
 copper and aluminum.

7. The method according to claim 1, wherein the step for removing said explored part of said thin film comprises etching and chemical mechanical polishing.

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8. The method according to claim 1, wherein said step for removing said explored part of said thin film explored comprises removing the residual of said patterned mental structure by planarizing.

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9. The method according to claim 1, wherein said step for removing said explored part of said thin film is at the edge bevel of said wafer.

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10. The method according to claim 1, wherein said step for removing said explored part of said thin film is at the backside of said wafer.

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11. The method according to claim 1, wherein said step for removing said explored part of said thin film employs an edge bevel removal technology.

12. The method according to claim 11, wherein said step for removing said explored part of said thin film employs an acid solution.

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13. The method according to claim 11, wherein said step for removing said explored part of said thin film employs an edge polishing technology.

14. The method according to claim 13, wherein said step for removing said explored part of said thin film employs a base slurry.

5 15. The method according to claim 13, wherein said step for removing said explored part of said thin film comprises a treatment of wafer drying.

16. A method for preventing edge peeling defect, comprising:
forming a barrier layer on a wafer;
10 forming a metal interconnect layer onto said barrier layer, wherein said barrier layer at said wafer edge is not covered by said metal interconnect layer; and
removing said barrier layer not covered by said metal interconnect layer.
15 annealing; and
planarizing the metal interconnect layer and removing the redundant metal on the wafer.

20 17. The method according to claim 16, wherein the material of said barrier layer is Ta.

18. The method according to claim 16, wherein the material of said barrier layer is TaN.

25 19. The method according to claim 16, wherein said metal interconnect layer is a Copper interconnect layer.

20. The method according to claim 16, wherein said metal

interconnect comprises said thin film explored at the wafer backside.

21. The method according to claim 16, wherein said step for removing said barrier layer not covered by said metal interconnect layer
5 comprises removing said thin film explored at the wafer backside.

22. The method according to claim 16, wherein said step for removing said barrier layer not covered by said metal interconnect layer comprises removing the incompletely patterned part of said mental
10 interconnect layer upper said barrier layer.

23. The method according to claim 16, wherein said step for removing said barrier layer not covered by said metal interconnect layer comprises an edge bevel removal treatment.
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24. The method according to claim 23, wherein said step for removing said barrier layer not covered by said metal interconnect layer employs an acid solution.

20 25. The method according to claim 23, wherein said step for removing said barrier layer not covered by said metal interconnect layer employs an acid solution comprising nitric acid and hydrofluoric acid.

25 26. The method according to claim 9, wherein said step for removing said barrier layer not covered by said metal interconnect layer comprises an edge polishing treatment.

27. The method according to claim 13, wherein said step for

removing said barrier layer not covered by said metal interconnect layer employs a base slurry.

28. The method according to claim 25, wherein the pH of said
5 base slurry is pH 7~12.

29. The method according to claim 27, wherein said step for
planarizing the metal interconnect layer and removing the redundant
metal on the wafer comprises etching for planarizing and chemical
10 mechanical polishing.